Clinica Ortopedica e Traumatologica
Università degli Studi di Pavia
Fondazione IRCCS - Policlinico S. Matteo
Chairman: Prof. FM Benazzo

Fast Track

F. Benazzo, SMP Rossi, M. Ghiara
Fast Track

Why?
It works....

1-year follow-up of 920 hip and knee arthroplasty patients after implementing fast-track

Siri B Winther, Olav A Foss, Tina S Wik, Shawn P Davis, Monika Engdal, Vigleik Jessen & Otto S Husby

- Primary and Revision cases
- Reduced length of stay
- A high level of patient satisfaction
- Low revision rates, together with
- Improved health-related quality of life and functionality
Low manipulation prevalence following fast-track total knee arthroplasty


- Prevalence of manipulation was lower or comparable to more conventional pathways.
- Inherent patient demographics were identified as risk factors for manipulation whereas LOS ≤ 4 days was not.
- Fast-track TKA does not result in increased risk of manipulation—despite a shorter LOS.
Fits all patients

Analysis of large-scale data supports that no patient should be excluded from a well defined program

Jørgensen CC, Kehlet H.

Role of patient characteristics for fast-track hip and knee arthroplasty.

Pain control and LOS

Pain, dizziness and general weakness together with organising factors are important for the first 24 hours. At 48 hours postoperatively, pain has a smaller role while dizziness, general “weakness” then become the most common explanations for prolonging hospital stay overall.

→ adjustment of perioperative care according to existing evidence will reduce LOS to two to four days with discharge to home

Husted H, Lunn TH, Troelsen A, Gaarn-Larsen L, Kristensen BB, Kehlet H.

Why still in hospital after fast-track hip and knee arthroplasty?

Acta Orthop 2011;82:679–84

Any kind of anaesthesia?

Preliminary data suggest that general anaesthesia may be even preferable in a fast-track program


A stay in the post-anaesthesia care unit (PACU) should be reconsidered, since the use of an opioid-sparing fast-track setup may reduce or even eliminate the conventional stay in the PACU unit

Multimodal pain control is fun and easier than you think

- Procedure-specific, pain treatment
- Intraoperative local infiltrations
- No peripheral nerve block
- Non opioid oral multimodal analgesia

Joshi GP, Kehlet H. Procedure-specific pain management: The road to improve postsurgical pain management?
Anesthesiology 2013;118:780–2

➔ less side effects
➔ easier perioperative management and nursing

Single preoperative high-dose glucocorticoid?

Consider new problems and find new solutions

Orthostatic intolerance (OI)

- OI can be due to an impaired peripheral vasoconstrictor response and thereby reducing brain oxygenation during mobilisation in up to 20% of patients 24 hours after surgery.
- Impaired haemodynamic responses to changes in position without association between bleeding, postoperative haemoglobin (Hb) concentration or opioid use.

Consider new problems and find new solutions

Several studies have shown a pronounced loss of quadriceps muscle function amounting to about 70–80% two to three days after a TKA, which may contribute to the early general “weakness” leading to prolonged hospital stay.

- MIS, muscle sparing approaches and Tissue sparing surgery
- Use of Tourniquet
- Pre-op muscle strength rehab
- Very early postop rehab protocols
New Solutions for Old Problems

Postoperative cognitive dysfunction (POCD) and sleep disturbances

- Interventions against delirium and POCD are multifactorial
- Reduction of both early delirium and later cognitive dysfunction by a well organised fast-track setup with discharge to home and multimodal opioid-sparing analgesia


- Postoperative sleep disturbances have been reduced by fast-track TKA
- Sleep disturbances still remain a problem for the first postop night

New Solutions for Old Problems

Bleeding, anaemia and transfusions

- Preoperative anaemia check and preparation
- Intraoperative reduction of bleeding, MIS, Tranexamic Acid
- Blood sparing and salvage protocols

Thromboembolic prophylaxis

- Conventional prolonged prophylaxis may not be required
- New oral anticoagulants
- Introduction of Aspirin at discharge
Safe protocols

Final purpose of fast track:

- provide the “pain and risk free operation”
- fast-track TKA large consecutive data suggest a reduced morbidity compared to existing literature and pre-institutional data

Malvyia 2011, McDonald 2012, Scott 2013, Jørgensen 2013
New Way of thinking and Organizing

• Profound organisational changes ➔ multidisciplinary collaboration: orthopaedic surgeons, anaesthestists, nurses and physiotherapists

• Specific joint arthroplasty section

• Accurate scheduling of surgeries

• The additional need for post-discharge nurse and physiotherapy assistance continues to be debatable

• Cost of hospitalisation can be reduced by a shorter length of stay
But do not exagerate!

- 3-4 days LOS it’s typical European Philosophy for fast track

- American idea of “day case” can be detrimental if applied to majority/all of patients
“Day case”

- Applicable for UNIs
- TKA only in restricted group of patients (ASA 1 to 2, male, under 70 years of age)
- Really economically advantageous in a public health system?
“Day case”

A lot of things to be considered: everything should be optimized

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**Table I. Risk factors for patients unable to be discharged on the day of surgery**

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>Reduced by pre-operative screening</th>
<th>Reduced by peri-operative treatment</th>
<th>Reduced by post-operative treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anaemia</td>
<td>Pain</td>
<td>Cognitive dysfunction</td>
<td></td>
</tr>
<tr>
<td>VTE and PE</td>
<td>Bleeding</td>
<td>Orthostatic intolerance</td>
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<tr>
<td>Muscle weakness</td>
<td>PONV</td>
<td>Comorbidity</td>
<td></td>
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<tr>
<td>Social and organisational</td>
<td>Wound ooze</td>
<td>Mortality</td>
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<td>problems</td>
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</tbody>
</table>

VTE, venous thromboembolism; PE, pulmonary embolus; PONV, post-operative nausea and vomiting

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From Catholic University of Louvain Cliniques Universitaires St-Luc, Brussele, Belgium

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The constraints on day-case total knee arthroplasty: the fastest fast track
“Day case”

Need of:

- an improved understanding of specific pre-operative risk factors
- better patient stratification and peri-operative medical treatment
- less invasive surgical techniques should be considered in the reduction of the 'surgical' effect on morbidity
“Day case”

Issues:

• where to discharge the patient: to their own home, a nursing facility or a rehabilitation centre

• cost of follow-up at home: visits by nurses, 24-hour on-call physicians being available for questions and to deal with complications and the cost of new technologies to follow-up patients from a distance.
“Summary”

Optimized fast-track hip and knee arthroplasty

- Optimizing patient information, fluid management and anaesthetic technique (established in centers)
- Optimizing pain management
- Optimizing transfusion strategy
- Optimizing rehabilitation and physiotherapy
- Reducing duration of thromboprophylaxis with preserved safety
- Reducing postoperative cognitive dysfunction

Safety aspects!
Risk of hip dislocation and implant loosening
Quality of Life

Length of stay 1–2 days
Reduced post-discharge pain, morbidity, convalescence and rehabilitation requirements with preserved safety

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Fast track: It’s evolution!!

1980

1990

2000

2010